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REPRINTED FROM THE

AMERICAN GYNÆCOLOGICAL AND OBSTETRICAL JOURNAL

FOR APRIL, 1896.

[Reprinted from the American Gynæcological and Obstetrical Journal for April, 1896.]

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There has been considerable discussion of the question whether fibroid tumors of the uterus predispose to sterility. Hofmeier,† after studying a number of cases, concludes that in the great majority the tumors have nothing to do with preventing conception. This has never seemed to the writer to be the way in which to put it. I have always looked upon the sterility as being the cause of the new growths. I think it will be found that the larger number of fibroids, or myomas, occur in women who have either borne no children or have only borne one or two, and these at a period remote from the occurrence of the tumors. Such, at least, has been my experience.

If this be so, then it may be that the sterility, as some one has said, antedating the fibroids, stands as the cause, and for the following reason: The uterus has implanted in it by Nature the property of accomplishing upon a certain condition—namely, the presence of a fecundated ovum—a sudden and rapid increase in size. If this inherent tendency to growth be not given an opportunity of expressing itself in a natural way—by an enlargement during pregnancy—then it will manifest itself by irregular and atypical growth or growths.

Be this as it may, the fact remains that fibroids, occurring, as they generally do, in middle life, are comparatively rarely complicated by or complicate pregnancy. Still, some of the most remarkable cases have been reported where pregnancy has occurred notwithstanding the presence of an enormous number of fibroids of great size in the walls of the uterus, with marked lengthening and distortion of the uterine canal. When this occurs, the combination of fibroids and pregnancy sometimes induces a condition which may tax to the utmost the judgment and skill of the attendant. The degree of danger to the woman and the necessity for interference, as well as the

* Read before the Medical Society of the State of New York, January 28, 1896.

† *Centralblætt*, No. 1, 1895.

kind of interference, must depend upon the way in which the tumor has grown, its size and location.

Another fact to be considered is that in a pregnant uterus fibroids usually grow with great rapidity. The same formative activity which is imparted to the uterus by the presence of the fecundated ovum is also imparted to the tumor; so that a fibroid which has previously caused very little inconvenience may rapidly increase to such a size as to make its mere presence, plus the pregnant uterus, a serious matter.

Of late a large number of cases have been operated upon, mostly by abdominal section; but even a superficial study of recent literature will show that, although the best methods of our best operators have been brought to bear, the results have been far from good, and leave much to be desired in evolving a better method of treatment. I have no such improvement in therapeutics or surgery to offer, but wish to put on record the history of a few cases which may serve to aid in arriving at a more "learned guess" as to what should best be done under given circumstances, and when to do it.

The first point to consider is whether interference is necessary at all. In a number of instances I have seen a tumor in the lower segments of the uterus look, early in pregnancy, as though it might make the labor impossible. I have been astonished to see this same tumor, when the labor came on, get out of the way of the advancing head, ascending out of the pelvis as the child descended, thus allowing the labor to come to a successful termination. I have three times been ready to do Cæsarean section for fibroids in the pelvis, and each time the labor has been completed without any further interference than the application of the forceps.

A little more experience proves that the results are not always so favorable, and the statistics of a large number of cases show that the mortality where there has been no interference is very great. Stavely* has collected the records of 597 cases in which nothing was done until labor came on. Of these, 220 died—a mortality of thirty-seven per cent. In 548 cases, collected by the same writer, fifteen per cent. aborted; and in 307 of those in which the maternal mortality is noted there was twelve per cent. of deaths. This would certainly show that in cases in which there is no interference the mortality is simply frightful, and would warrant the general statement that interference is usually justified. The percentage of deaths where abortion occurred is so much lower than where the labor went to term that the advisability

* *Johns Hopkins Bulletin*, March, 1894, p. 33.

of inducing abortion would seem also to be shown. Still, a mortality of twelve per cent. is very great, the mortality of ordinary abortions, where they are properly managed, being *nil.*

The danger after abortion, as has been proved by the records of many cases, comes principally from distortion of the uterine canal, making it impossible to entirely clear out the placenta and membranes. Small portions, being left, decompose and set up sepsis. Sepsis in a fibroid uterus is very much more dangerous than under ordinary conditions, because the same distortion of the pelvic canal which prevented the clearing out of the secundines also prevents thorough drainage and washing out with antiseptic solutions, and because the retrogressive changes, affecting the uterus and the tumor as well after pregnancy, lower the resisting power and make the spreading of the infectious process to the tumor almost certain.

That sepsis does not necessarily occur from retention of the secundines, even under favorable circumstances, is shown by a case which I saw with Dr. G. C. Clarke, of Niagara Falls, a few years ago. The patient was a woman, about thirty-five years of age, who was pregnant, and had been known to have a large fibroid for a number of years. The tumor completely filled the pelvic cavity and pushed the cervix so far above the brim in front that it could not be reached. During the third month of her pregnancy she aborted. The fœtus came away, but the doctor was unable to get at the placenta, and called me to consult as to the propriety of doing hysterectomy. Her pulse and temperature were normal, and I advised waiting, and an operation should there be any indication of sepsis. This, however, did not occur; nothing more was ever seen or heard of the placenta, the patient's temperature did not go above normal, and she made a perfect recovery.

Such results as the first case must be the exception. Drs. Lusk and Kessler * had a similar case, but the patient died of sepsis; and the other two, which I wish to report, like Dr. Lusk's case, did not have such a happy termination.

The first case was that of a woman, thirty-five years of age, who had been married a number of years and had never been pregnant. She first came to me when she was in the second month, pregnancy having been diagnosed by her attending physician. The tumors were large and seemed to be increasing rapidly; she was very much disturbed about herself, and consulted me as to the best plan of procedure. I advised her to wait until about the fourth month of preg-

* *Brit. Gyn. Jour.*, p. 322, 1894.

nancy, and if the tumors kept on growing we would then induce abortion. She was very anxious to bear a living child, but did not wish to undergo any excessive risk. I advised waiting, because I hoped in this way to obtain better involution and consequent subsidence of the tumors. Two months later she entered my private hospital. She was then in the fourth month, and the abdomen was distended to the size of the uterus at term. As it did not seem that it would be much longer possible for her abdomen to contain the tumor and the fœtus, should they increase at the same rate that they had been doing, I decided that it was best to bring on an abortion.

This I found quite difficult to do; but finally uterine pains were started, and the fœtus expelled. The placenta did not come away, and I was obliged to remove it with my finger and the placental forceps. The finger would barely enter the uterine cavity, so that it was not of much use. A large intramural growth upon the right side of the tumor pressed upon the cavity and made it semicircular. With the curette and forceps I removed all of the placenta that was possible, and then thoroughly washed out the uterine cavity. The patient did well for two days. Upon the third day the temperature went up to 101.5°, and the next day it went above 102°, with a pulse of 120. Repeated douching of the uterine cavity kept the temperature below 101° for the next five days. On the tenth day, after a chill, it jumped up to 102.5°, the pulse to 110. It seemed to me then that the time had come when expectant treatment should cease. Both the patient and her husband had absolutely refused to allow an operation up to this time. They now reluctantly gave their consent, and upon the tenth day after the abortion I opened the abdomen. The moment I did so there was a very perceptible odor of decomposition. I found a large tumor attached to the body of the uterus by a pedicle as large as my wrist. The tumor was nearly black and proved to be putrid all the way through. The intestines were not adherent to it, but on the upper edge the omentum was firmly attached. The body of the uterus contained a number of smaller growths. I did a complete hysterectomy, washing out the abdominal cavity and using drainage. It was, however, too late, and the patient died within twenty-four hours after the completion of the operation. The growths with the uterus weighed nine pounds. An examination showed a long semicircular uterine canal and a small piece of putrid placenta at the upper angle.

The other case I saw in a distant city last summer. The patient was thirty-two years of age, recently married, and had not borne children. In the month of April she was found to be three months ad-

vanced in pregnancy. Her unusual symptoms led to an examination and the discovery of multiple fibroids, the largest the size of a fœtal head at term. In May she had a slight hæmorrhage, subsiding after a few days of rest in bed. By the first of June the abdomen was larger than at full term, but there were no pelvic pressure symptoms, and her general condition was good. Upon the 8th of June there was an escape of the amniotic fluid. On the 13th a five-months' fœtus, partly macerated, was removed from the vagina. The placenta was found to be implanted at the fundus anteriorly, the lower edge overlapping an interstitial fibroid the size of an orange in the anterior wall. The removal of the placenta was accomplished with great difficulty, as it was soft and friable, and already had a slight odor. The uterus was washed out with bichloride solution and packed with iodoform gauze. From the 14th to the 16th of June, temperature varied from 100° to 101°. Upon the 17th, the third day after the miscarriage, the evening temperature was 103°, the odor very offensive.

The patient was then seen by Dr. Hunter Robb, of Cleveland, who examined her under ether and thoroughly curetted the uterus. From the 18th to the 20th the high temperature continued, with chills. Intra-uterine douches were used; there was no pain or tympanites. From the 21st to the 23d she seemed to improve, except that the lochia still continued offensive. Dr. E. C. Dudley, of Chicago, saw her, and advised hysterectomy if the septic symptoms did not abate.

On the 24th she had another chill. On the 26th was seen by Dr. William M. Polk, of New York. From the 26th to the 29th temperature varied from 100° to 101°; pulse, 100 to 110. No chills. Appetite and general condition better. A very rapid diminution was noticed in the size of the uterus and tumors; the lochia continued very profuse and foul.

I saw her on the 2d of July, nearly three weeks after the abortion, she having had chills and high fever the day before. Examination showed fragments of sloughing fibroids hanging out of the uterus, evidently attached to the anterior wall, being the remains of the tumor which had been noted at the time the placenta was removed. I advised operation, and was recalled by telegram to perform hysterectomy the following day. That night, however, she was taken with pneumonia at the base of the right lung. From the 4th to the 9th of July she was profoundly ill, with no marked pelvic symptoms. The discharge was scanty and much less offensive. On the 18th there were symptoms of gangrene of the lung. Dr. Roswell Park resected

several ribs, draining the pleural cavity. The patient, however, was too far gone, and died ten days later of exhaustion. The autopsy showed a gangrenous cavity at the base of the right lung. The uterus and tumors reached the size of a fœtal head; the peritoneal coverings were normal, and there were no signs of pelvic inflammation. A sloughing ulcer of irregular and ragged base was noted at the site of the sloughing fibroid. There was a general purulent endometritis.

In order to show that these cases are not unique, I will quote from recent literature a few more of a similar nature:

Dr. Jacob Frank * reports a case where abortion was induced between the fourth and fifth months. It was found impossible to induce expulsion of the afterbirth, it being hidden behind the tumor. The temperature gradually increased, and the woman developed evidences of sepsis. Four days later the placenta was expelled spontaneously. The temperature still remained high, notwithstanding intra uterine douches. The tumor sloughed, and finally an abscess formed and opened through the abdominal wall, and through this abscess cavity the sloughing tumor was finally withdrawn, Nature having accomplished its expulsion. The patient, after a long and serious illness, eventually recovered.

Dr. Barton Hirst † reports two cases, in the first of which two fibromata were removed from a puerpera six weeks after labor. The tumors offered no mechanical hindrance to labor, as they were attached near the fundus. After delivery the woman had the symptoms of an infected endometrium, and required vigorous antisepsis to conquer the alarming manifestations of septic infection. The symptoms finally abated, but a slight rise of temperature remained. The tumor was removed six weeks after labor. Two days afterward the patient had a normal temperature and recovered.

In the second case there was a large fibroid reaching from the fundus of the involuted uterus to the liver. It offered no difficulty at the time of the labor, but directly afterward there were symptoms of sepsis. After waiting twelve days and finding no abatement of the fever, the tumor was removed. The operation was not difficult. There were a good many adhesions, especially to the omentum, and there was free hæmorrhage. The patient recovered perfectly.

Dr. Hirst concludes: "From these two operations and the observation of cases treated expectantly by others, in a number of instances with a fatal result, I shall always hold myself in readiness to operate

* *Annals of Gyn. and Pæd.*, vol. ix, p. 140.

† *Ibid* vol. v, p. 603.

on fibromata after labor as soon as I can conclude that they are infected. The low vitality of these growths makes them peculiarly liable to septic invasion. Germs which the cells of the uterine body could conquer and destroy would survive if they once got access through the lymphatics of the womb to a fibroid tumor in or on the uterine walls."

Dr. T. J. Crofford * reports a case of a fibroid tumor complicating delivery in which the tumor sloughed. The patient was too weak for an operation at the time, but on the seventeenth day after delivery abdominal section was made. The growth was near the fundus, above the point at which the Fallopian tubes are given off. The appendages were removed and the abdomen closed. The patient recovered well from the abdominal section, but six days later septic symptoms became more formidable, the temperature going up to 106°. The lower portion of the tumor, as well as the whole interior of the uterine canal, was found to be in a septic and sloughing condition. Large portions of the tumor were removed through the vagina with scissors and knife, and the oozing surface cauterized with the thermocautery. The whole of the uterine canal was thoroughly curetted, irrigated, and packed with sterilized gauze. This procedure was repeated half a dozen times at intervals, until almost the entire fibroid tumor and a portion of the uterus were removed by morcellement. The patient eventually recovered.

It would seem from a careful consideration of these cases that the dangers from sepsis following an abortion where there are fibroid tumors is very much greater than ordinary. As has been so well explained by Dr. Hirst in the quotation already given, the tumors are very apt to become infected, and if so, the infection of so large a mass must increase very materially the dangers to the patient. Had this fact been more fully appreciated in the two cases which I have here reported, earlier operation might have been insisted upon. In both cases the obstacle which so often thwarts our best endeavors—the opposition of friends—stood in the way. Nevertheless, this might have been overcome by more positive statements of danger threatened and probabilities of cure if an operation were submitted to.

In my own case I did not fully appreciate the danger of the sloughing of the fibroid; and although I knew that I was not controlling the intra-uterine sepsis, I felt that the patient might ultimately be able to successfully combat it as long as it was confined to the uterine cavity. This, however, was a wrong notion, for the intra-

* *Am. Jour. of Obstetrics*, September, 1893, vol. xxvii, p. 398.

uterine sepsis, as I now feel convinced, was almost certain to spread to the tumor sooner or later, and that being once accomplished, the chances of successful operation were very greatly diminished.

It seems to me, therefore, that one can not too strongly state that, should sepsis occur in a uterus after labor or after an abortion, such a uterus containing fibroids of any amount or size, unless the symptoms subside very promptly under douching and curetting, an operation for the removal either of the tumor or the uterus and tumor should be undertaken at once.

It may be said that the number of cases reported in support of this view is too few. Perhaps it is. But is it not probable that many of the fatal cases in the large number collected by Stavely were due to the same cause? Unfortunately we have not got the details of all the cases, and therefore are left somewhat in doubt. But certainly it is a fair supposition that sloughing of the fibroids took place in a certain proportion. At any rate, the mortality after abortion (twelve per cent.) is so great that prompt and radical treatment would seem to be indicated. It may be urged that if the tumor be upon the inside of the uterus, it may come away by the process of sloughing, and that as long as there is good drainage there will be no necessity for interference. This, I admit, may sometimes be true. But the risks are so exceedingly great, and the opportunities for absorption so good, and the infection of distant organs is so likely to occur, that the expectant plan would hardly seem justified after sloughing has once been recognized.

In regard to cases after labor at term, the same indications would seem to hold. The greater dilatation of the cervix might make intrauterine operation more easy, and would certainly favor the clearing out of the uterine cavity and the successful treatment of a septic endometritis. Still, the dangers of puerperal sepsis are great enough under any circumstances, and the complications arising from the presence of a fibroid tumor would certainly make the dangers greater. While we can not lay down any rules as to the necessity for hysterectomy, the added dangers which may arise from the sloughing of the fibroid should make us stand ready to do hysterectomy should the symptoms seem urgent.

It has not been my purpose in this paper to discuss all of the relations of fibroids to pregnancy. The question is a very large one, and can not be discussed in so brief a time as is here allotted. I have only tried to illustrate by cases and to state the dangers where sepsis exists in a uterus with fibroids after abortion and labor, and to throw out some hints as to indications for treatment.